

Service Manual

Air Conditioner



CS/CU-RE9GKE
CS/CU-RE12GKE



Please file and use this manual together with the service manual for Model No. CS-PE9DKE CU-PE9DKE CS-PE12DKE CU-PE12DKE , Order No. GMAC0506048C2

 WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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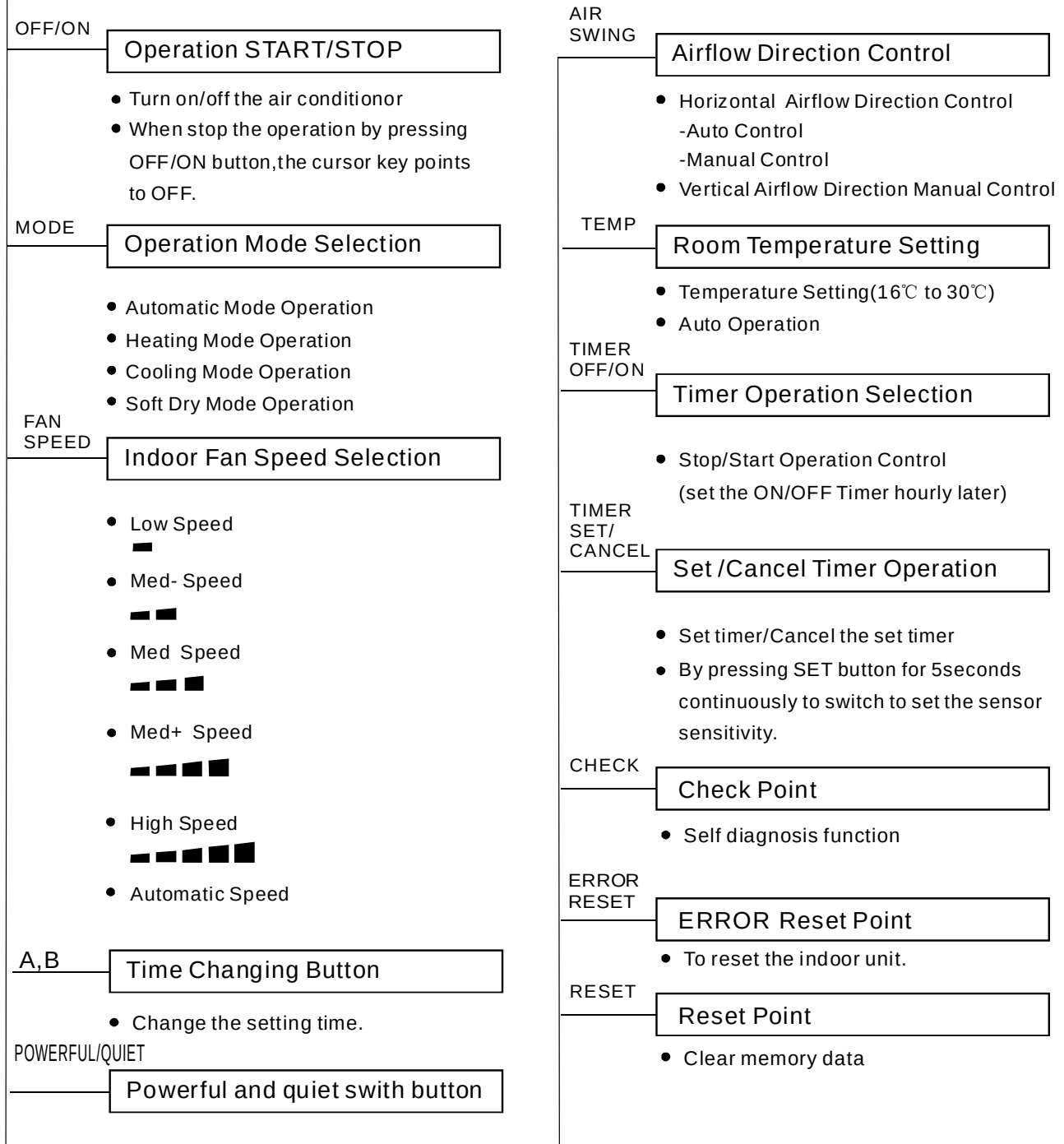
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1 Features

- High Efficiency
- Powerful/Quiet operation mode.
- Auto Restart Control
Automatically restart after power failure
- 12-hour Timer Setting, 4 kinds of Timer mode.
 - Delay ON Timer
 - Delay OFF Timer
 - Delay OFF-ON Timer
 - Deley ON-OFF Timer
- Enviromental Friendly (For Refrigerant : R410A Model)
Zero ozone depleting potential and low global warming potential by using R410A refrigerant.
- Comfort Environment
Air filter with function to reduce dust and smoke
- Removable and washable Front Panel
- Breakdown Self Diagnosis function

2 Functions

Remote Control



Indoor Unit



Auto Switch Button

Power Switch ON/OFF

- When the remote control cannot be used or for repairing and testing ,please use this button.

Force Cooling Operation

- Keep pressing this button for 5 seconds to start the force cooling operation.

Force Heating Operation

- Keep pressing this button for 8 seconds to start the force heating operation.

Different Remote Controlling Setting

- Keep pressing this button for 11 seconds to change different remote controlling setting(A↔B) Mode.

Signal Receiving Sound

- Keep pressing this button for 16 seconds to turn off or turn on the signal receiving sound or H14 Abnormality Detection Mode.

Operation Indication Lamps

- Power (green) Lights up in operation; Blinks during Hot Start operation and determining Auto Operation mode
- Timer(orange) Light up in Timer Setting. Blinks in Self Diagnosis Control

Operation Mode

- Cooling/Heating/Soft Dry /Auto Operation

Feature mode

- Powerful
- Quiet

Anti-freezing Control for the Evaporator

- Cooling or Soft Dry Operation

Time Delay Safety Control

- The unit will restart operation in 3-4 minutes after each pause.

Warm Booting Control

- Indoor fan starts running when indoor piping temperature reaches 19°C or above.

Indoor Fan Speed Control

- High,Med+, Med, Med-,Low
- Auto Fan Speed

Airflow Direction Control

- Automatic Airflow Direction Control
The louver automatically swings up and down
- Five Manual Airflow Direction Control

Delayed On-timer Control

- For cooling or soft dry mode, the unit starts 15 minutes before the set time with the remote control, but for heating mode 30 minutes before the set time.

Automatic Restart Control

- Operation is restarted after power failure at previous setting mode.

Outdoor Unit



4-way Valve Control

- If the unit is stopped during Heating Operation, the 4-way valve will remain in heating mode operation for 3 minutes.

Overload Protector

- Inner protector

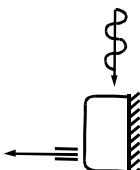
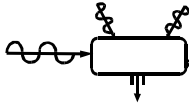
30 Seconds Forced Operation Control

- Once the compressor is activated, it does not stop within 30 seconds. It stops immediately with remote control ON/OFF button.

Total Running Current Control

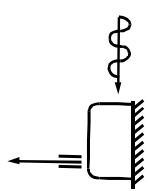
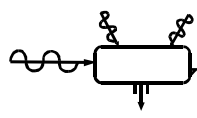
Deice Operation

3 Product Specifications

		Unit	CS-RE9GKE	CU-RE9GKE
Cooling Capacity		kW	2.60(0.90-3.00)	
Heating Capacity		kW	3.30(0.90-4.10)	
Moisture Removal		L/h	1.5	
Power Source		Phase V Cycle	Single 230 50	
Airflow Method		OUTLET  INTAKE 	SIDE VIEW 	TOP VIEW 
Air Circulation	Indoor Air (low)	m³/min	5.94	-
	Indoor Air (medium)	m³/min	7.71	-
	Indoor Air (high)	m³/min	9.8	-
	Outdoor Air	m³/min	-	-
Noise Level		dB(A)	Cooling:high42,Low27 Heating:high42,Low27	Cooling:high47 Heating:high48
Electrical Data	Input	W	Cooling:750(190-1000) Heating:820(170-1110)	
	Running Current	A	Cooling:3.5 Heating:4.0	
	EER/COP	W/W	Cooling:3.46(3.00~4.73) Heating:4.02(3.56~5.29)	
	Starting Current	A	3.7	
Piping Connection Port(Flare piping)		Inch Inch	G:half union3/8" L:half union1/4"	G:3-way valve3/8" L:2-way valve1/4"
Piping Size(Flare piping)		Inch Inch	G:gas side3/8" L:liquid side1/4"	G:gas side3/8" L:liquid side1/4"
Pipe Length Range		m(ft)	3(9.8)~15(49.2)	
Height Different		m(ft)	5(16.4)	
Refrigeration Charge Less		m(ft)	7.5(24.6)	
Addictional Gas Amount		g/m(oz/ft)	20(0.2)	
Drain Hose	Inner Diameter	mm	14	-
	Length	m	0.5	-
Power Supply Cord Length (Number of core-wire)		m	1.9 3 core-wire/1.0mm²	-
Dimensions	Height	mm	280	540
	Width	mm	799	780
	Depth	mm	183	289
Net Weight		kg	8.5	29
Compressor	Type		-	Rotary(1 cylinder) Rolling piston type
	Motor Type		-	Induction(6 poles)
	Rated output	W	-	750
Air Circulation	type		Cross-flow fan	Propeller fan
	Motor type		Induction(8poles)	Induction(6 poles)
	Input	W	-	-
	Rated Output	W	30	25
	Fan Speed	Low	rpm	830±60
		Med	rpm	1070±60
		High	rpm	1360±60
				730±60

		Unit	CS-RE9GKE	CU-RE9GKE
Heat Exchanger	Description		Evaporator	Condenser
	Tube Material		Copper	Copper
	Fin Type		Slot type	Corrugation type
	Rows/Stage		(Plate fin configuration,forced draft)	
			2 x 15	1X24
	FPI		20	18.5
	Dimensions	mm	610x315x25.4	726x504x18.2
Refrigerant Control Device			-	Capillary Tube
Refrigeration Oil		(c.c)	-	RB68A or Freol Alpha68M
Refrigerant (R410A)		g	-	840
Thermostat			Electronic Control	sensor
Protection Device			-	Inner protector
Capillary	Length	mm	-	600±10
	Circulation	L/min	-	8.15±0.2
	Inner Diameter	mm	-	1.3
Air Filter			P.P. Honeycomb	
Refrigerant Circulation Control Device			Capillary	
Fan Motor Capacitor		μF , V		1.2μF , 450V

- Specifications are subject to change without notice for further improvement.

		Unit	CS-RE12GKE	CU-RE12GKE
Cooling Capacity		kW	3.50(0.90-3.90)	
Heating Capacity		kW	4.25(0.90-5.10)	
Moisture Removal		L /h	2.0	
Power Source		Phase V Cycle	Single 230 50	
Airflow Method		OUTLET  INTAKE 	SIDE VIEW 	TOP VIEW 
Air Circulation	Indoor Air (low)	m³/min	6.79	-
	Indoor Air (medium)	m³/min	8.38	-
	Indoor Air (high)	m³/min	9.9	-
	Outdoor Air	m³/min	-	-
Noise Level		dB(A)	Cooling:high42,Low30 Heating:high42,Low33	Cooling:high48 Heating:high50
Electrical Data	Input	W	Cooling:1010(170-1200) Heating:1140(150-1460)	
	Running Current	A	Cooling:4.80 Heating:5.20	
	EER/COP	W/W	Cooling:3.46(3.25~5.29) Heating:3.72(3.49~6.00))	
	Starting Current	A	4.9	
Piping Connection Port(Flare piping)		Inch Inch	G:half union3/8" L:half union1/4"	G:3-way valve3/8" L:2-way valve1/4"
Pipe Length Range		m(ft)	3(9.8)~15(49.2)	
Height Different		m(ft)	5(16.4)	
Refrigeration Charge Less		m(ft)	7.5(24.6)	
Addictional Gas Amount		g/m(oz/ft)	20(0.2)	
Piping Size(Flare piping)		Inch Inch	G:gas side3/8" L:liquid side1/4"	G:gas side3/8" L:liquid side1/4"
Drain Hose	Inner Diameter	mm	14	-
	Length	m	0.5	-
Power Supply Cord Length (Number of core-wire)		m	14 3 core-wire/1.0mm²	- -
Dimensions	Height	mm	280	540
	Width	mm	799	780
	Depth	mm	183	289
Net Weight		kg	8.5	31
Compressor	Type		-	Rotary(1 cylinder) Rolling piston type
	Motor Type		-	Induction(6 poles)
	Rated output	W	-	750
	type		Cross-flow fan	Propeller fan
	Motor type		Induction(8poles)	Induction(6 poles)
	Input	W	-	-
	Rated Output	W	30	25
	Fan Speed	Low	rpm	940±60
		Med	rpm	1160±60
		High	rpm	1370±60
				880±60

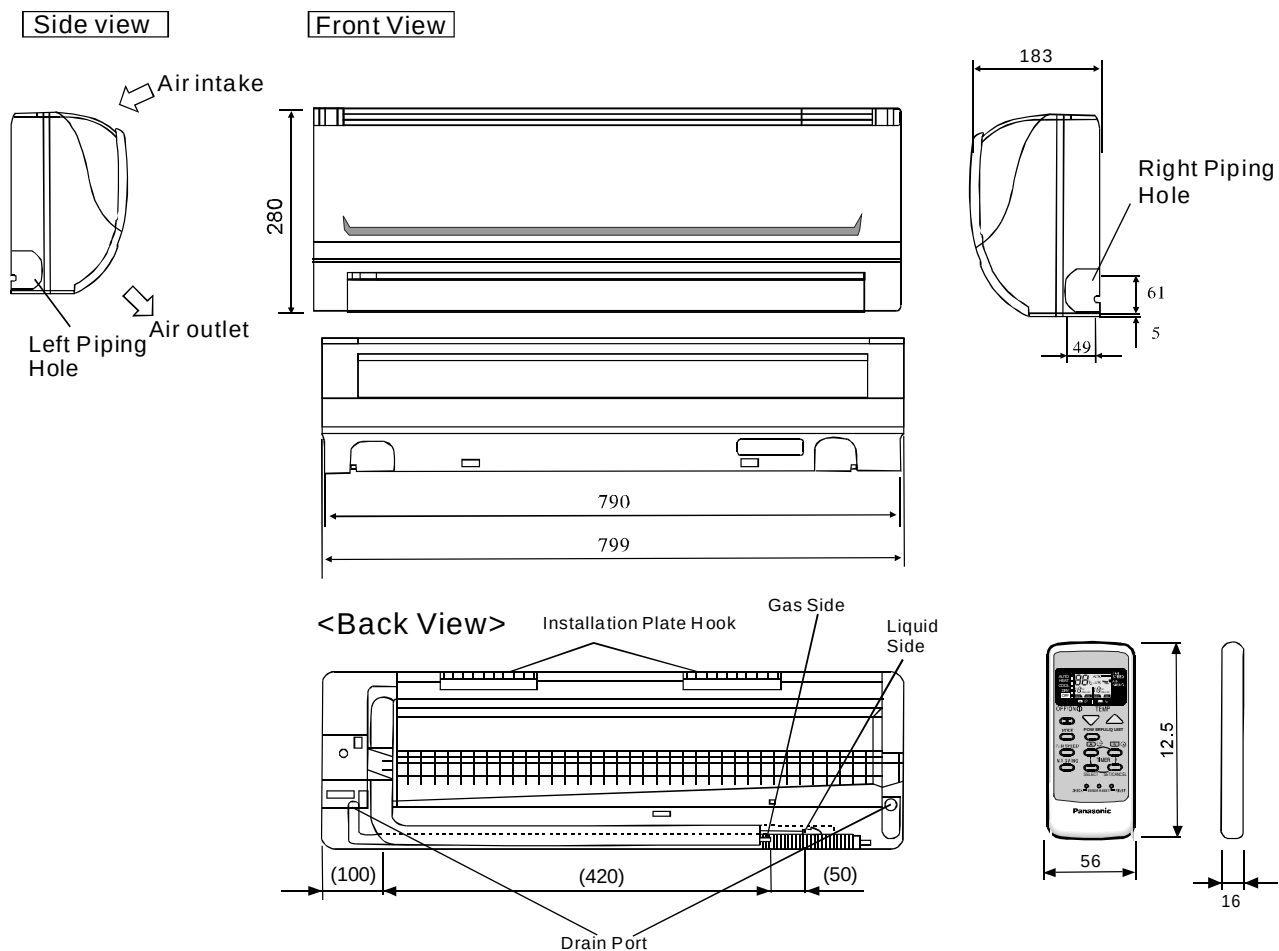
		Unit	CS-RE12GKE	CU-RE12GKE
Heat Exchanger	Description		Evaporator	Condenser
	Tube Material		Copper	Copper
	Fin Type		Slot type	Corrugation type
	Rows/Stage		(Plate fin configuration, forced draft) 2 x 15 2X24	
	FPI		20	17
	Dimensions	mm	610x315x25.4	726 696 X504x36.4
Refrigerant Control Device			-	Capillary Tube
Refrigeration Oil		(c.c)	-	RB68A or Freol Alpha68M
Refrigerant (R410A)		g	-	1040
Thermostat			Electronic Control	-
Protection Device			-	Inner protector
Capillary	Length	mm	-	310±10 565±20
	Circulation	L/min	-	11.3±0.2 12.3±0.2
	Inner Diameter	mm	-	1.3 1.5
Air Filter			P.P. Honeycomb	
Refrigerant Circulation Control Device			Capillary	
Fan Motor Capacitor		µF , V		1.8µF , 450V

- Specifications are subject to change without notice for further improvement.

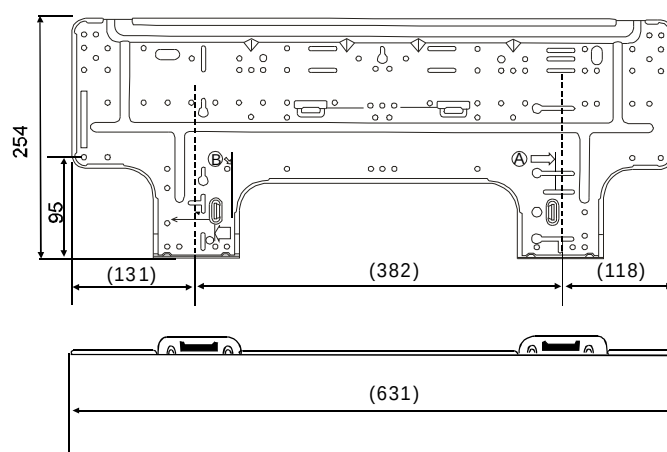
4 Dimensions

Indoor Unit CS-RE9/12GKE

Unit : mm



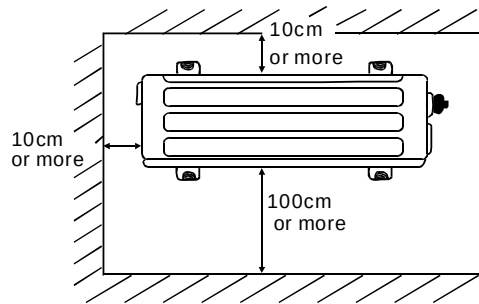
Installation plate (Front View)



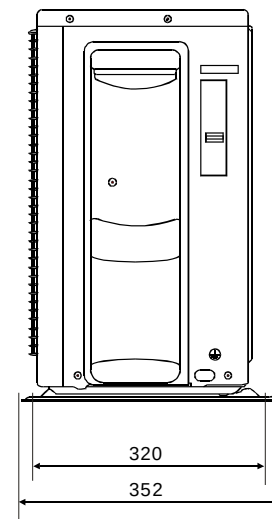
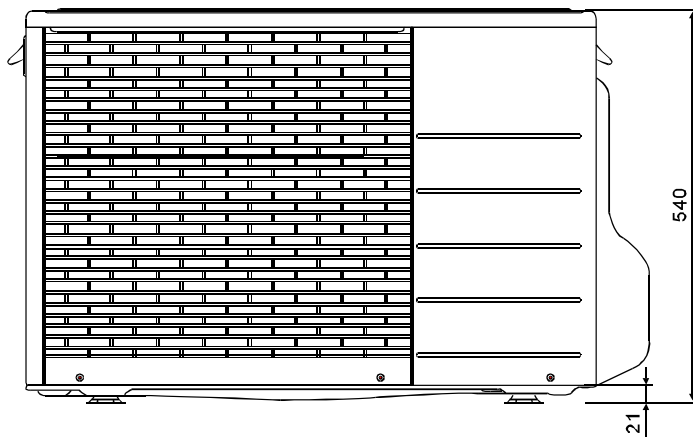
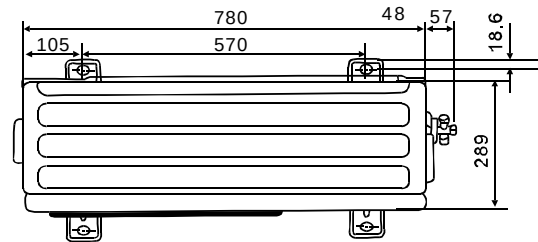
Outdoor Unit

CU-RE9/12GKE

Unit : mm

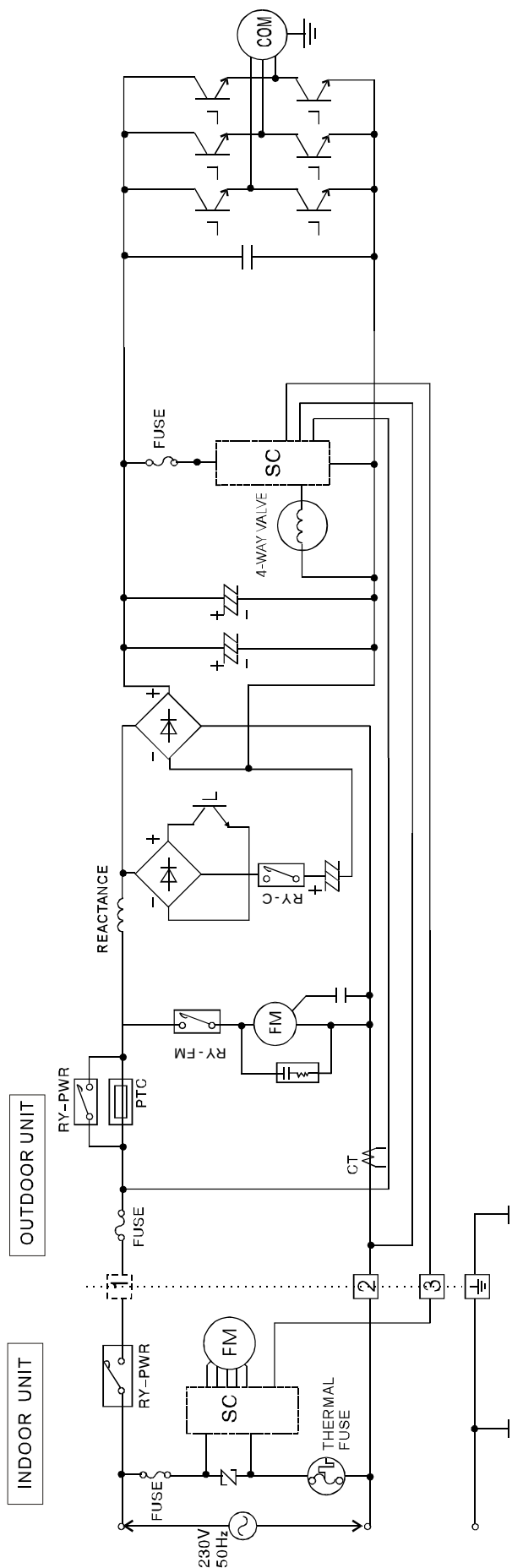


<Top View>



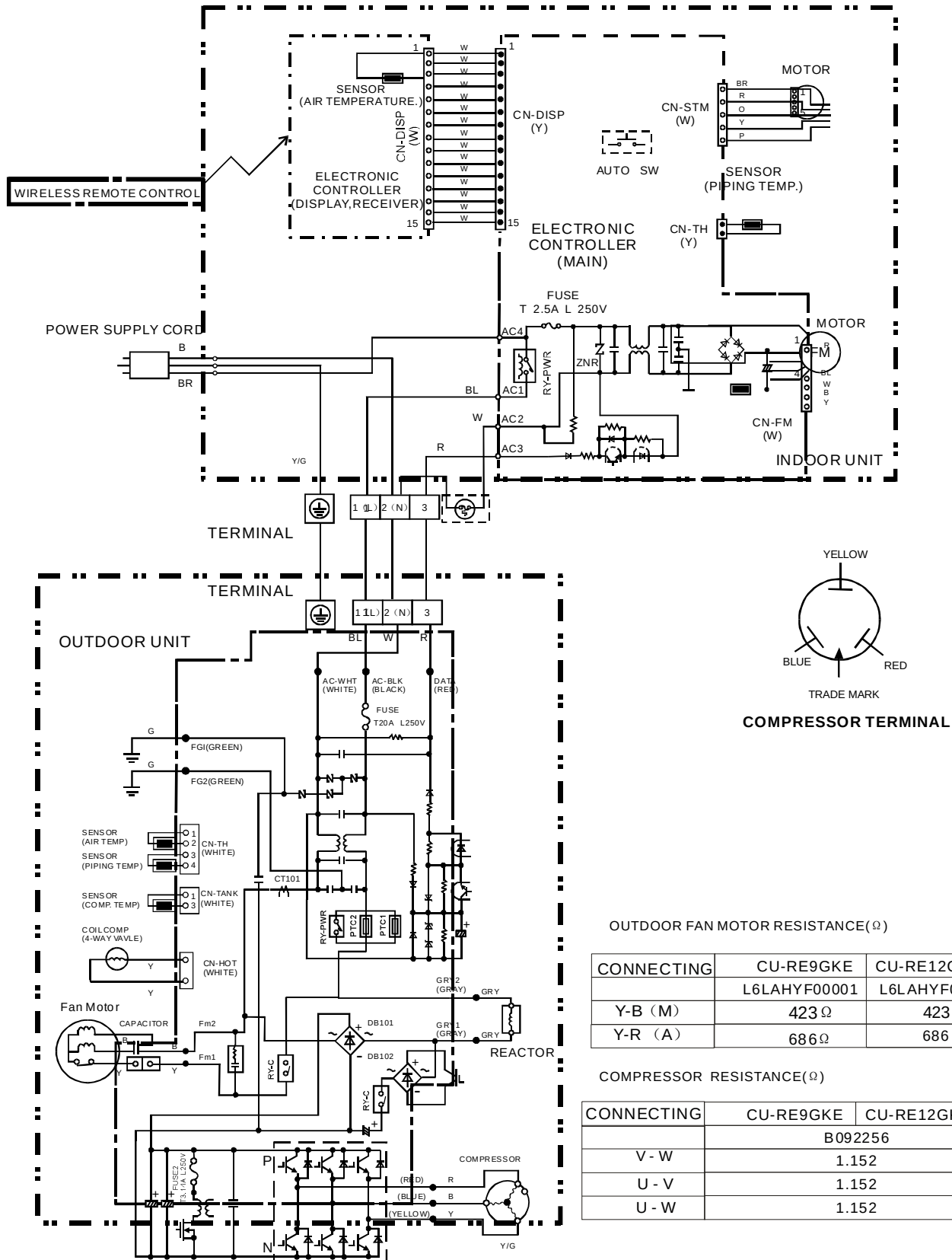
5 Block Diagram

CS-RE9GKE/CU-RE9GKE
CS-PE12DKE/CU-PE12DKE



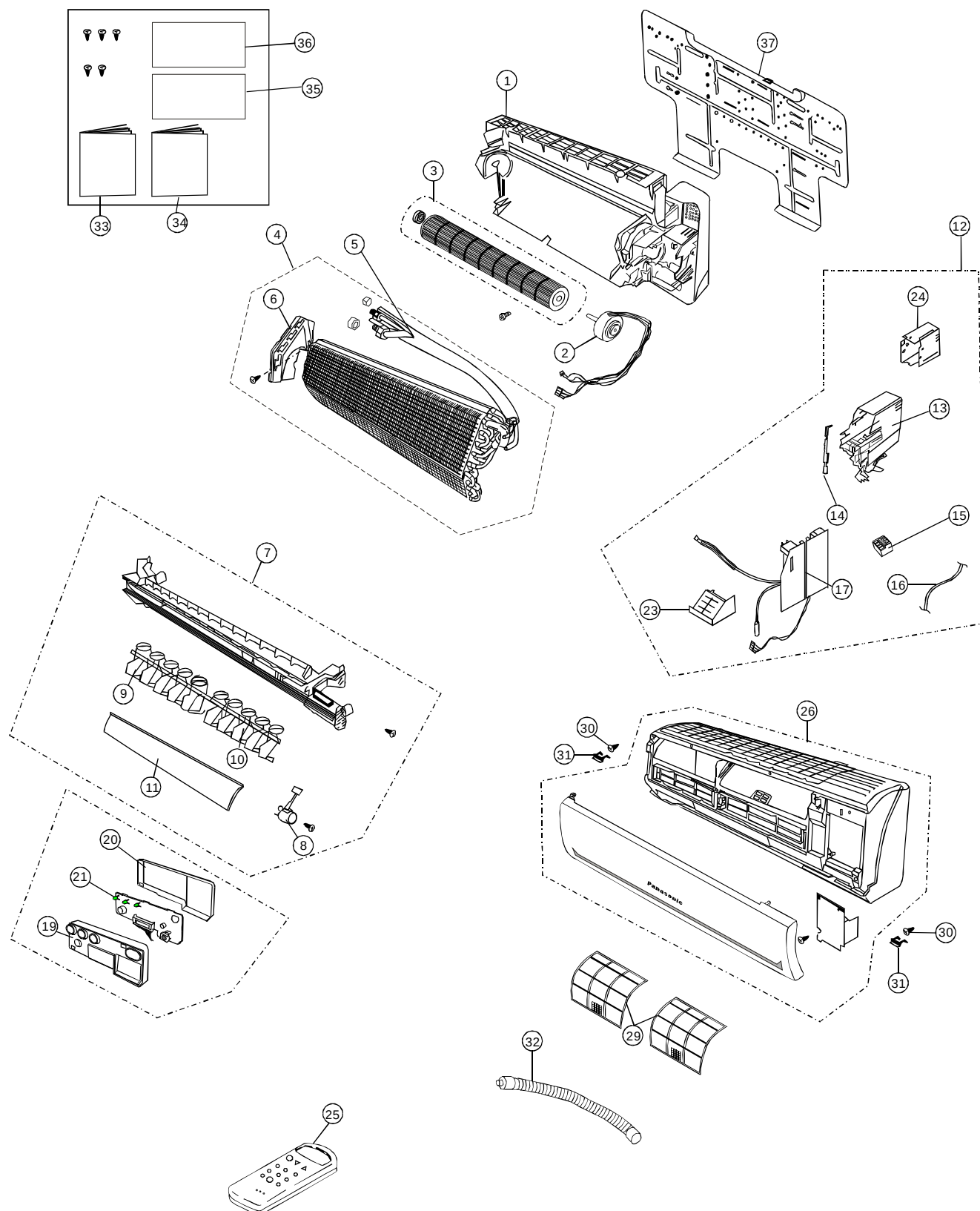
6 Wiring Diagram

CS/CU-RE9GKE
CS/CU-RE12GKE



7. Exploded View

CS-RE9GKE / CS-RE12GKE



8 Replacement Parts List

CS-RE9GKE / CS-RE12GKE

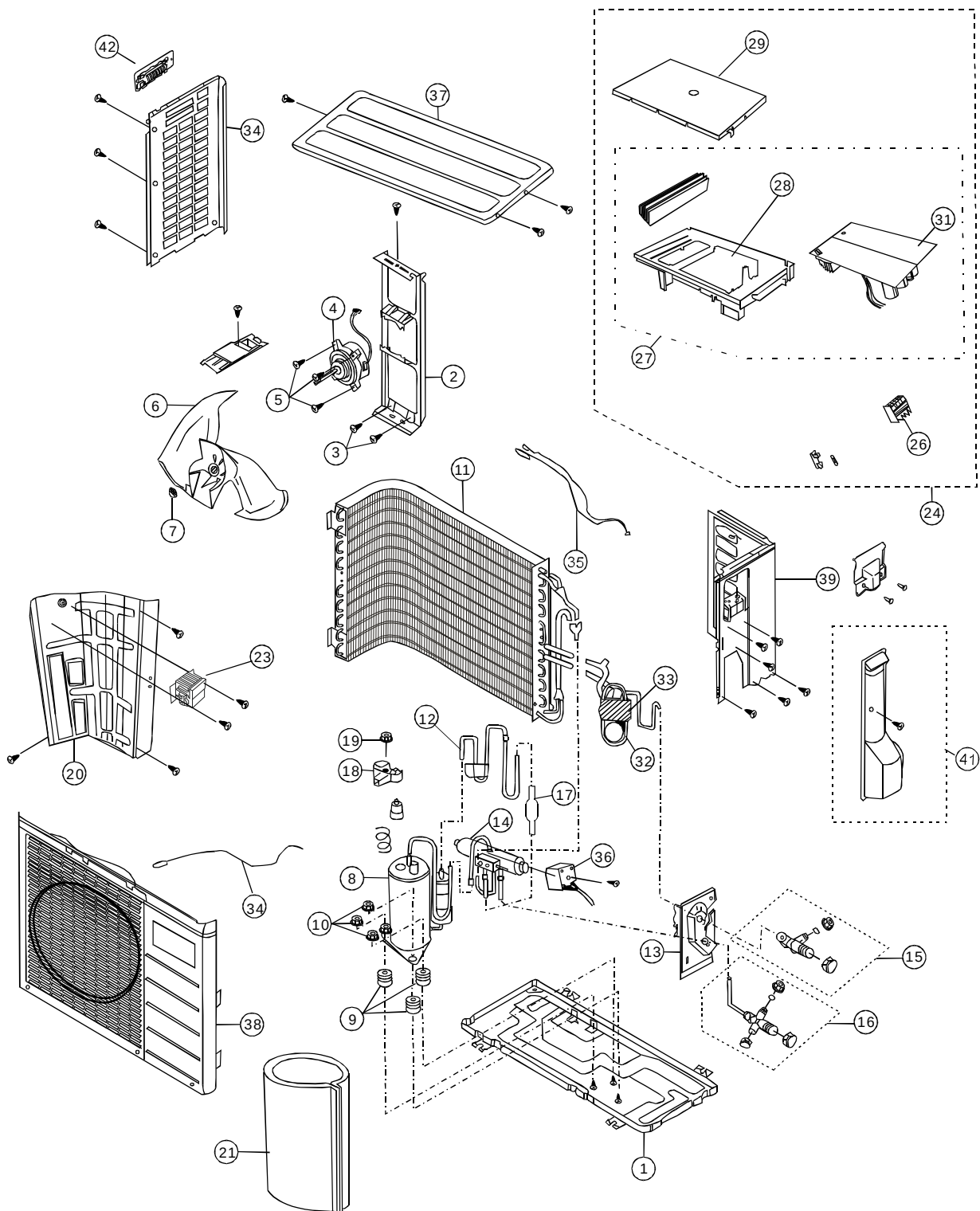
NO	PART NAME&DESCRIPTION	Q'TY	CS-RE9GKE	CS-RE12GKE	RE
1	CHASSIS COMPLETE	1	CWD50C1544	CWD50C1544	
2	FAN MOTOR	1	ARW51G8P30AC	ARW51G8P30AC	
3	CROSS FLOW FAN COMPLETE	1	CWH02C1054	CWH02C1054	
4	EVAPORATOR	1	CWB30C2188	CWB30C2187	
7	DISCHARGE GRILLE COMPLETE	1	CWE20C2701	CWE20C2723	
8	AIR SWING MOTOR	1	CWA981091	CWA981091	
9	HORIZONTAL VANE(LEFT)	1	CWE24C1189	CWE24C1189	
10	HORIZONTAL VANE(RIGHT)	1	CWE24C1190	CWE24C1190	
11	VERTICAL VANE	1	CWE24C1191	CWE24C1191	
12	C-BOX	1	CWH14C5704	CWH14C5703	
13	CONTROL BOARD CASE	1	CWH102337	CWH102337	
14	PARTICULAR PIECE	1	CWD932689	CWD932689	
15	TERMINAL BOARD COMPLETE	1	CWA28C2279	CWA28C2279	
16	POWER SUPPLY CORD COMPLETE	1	CWA20C2609	CWA20C2609	
17	ELECTRONIC CONTROLLER	1	CWA73C2643	CWA73C2642	
19	INDICATOR HOLDER-FRONT	1	CWD932717	CWD932717	
20	INDICATOR HOLDER-BACK	1	CWD932718	CWD932718	
21	INDICATOR PCB	1	CWA744835	CWA744835	
23	CONTROL BOARD FRONT COVER	1	CWH131235J	CWH131235J	
24	CONTROL BOARD TOP COVER	1	CWH131237	CWH131237	
25	REMOTE CONTROL	1	CWA75C3077	CWA75C3077	
26	FRONT GRILLE COMPLETE	1	CWE11C3768	CWE11C3768	
29	AIR FILTER	2	CWD001168	CWD001168	
30	SCREW-FRONT GRILLE	2	XTT4+16CFJ	XTT4+16CFJ	
31	CAP-FRONT GRILLE	2	CWH521121	CWH521121	
32	DRAIN HOSE	1	CWH851095	CWH851095	
33	OPERATING INSTRUCTIONS	1	CWF565612	CWF565594	
34	OPERATING INSTRUCTIONS	1	CWF565594	CWF565612	
35	INSTALLATION INSTRUCTION	1	CWF613195	CWF613195	
36	INSTALLATION INSTRUCTION	1	CWF613196	CWF613196	
37	INSTALLATION PLATE	1	CWH361086	CWH361086	

Note:

All parts are supplied from PHA-AG, P.R. China.

9 Exploded View

CU-RE9GKE / CU-RE12GKE



10. Replacement Parts List

CU-RE9GKE / CU-RE12GKE

NO	PART NAME&DESCRIPTION	Q'TY	CU-RE9GKE	CU-RE12GKE	RE
1	CHASSIS ASS'Y	1	CWD50K2162A	CWD50K2162A	
2	FAN MOTOR BRACKET	1	CWD54C1012	CWD54C1012	
3	SCREW-FAN MOTOR BRACKET	2	CWH551148A	CWH551148A	
4	FAN MOTOR	1	L6LAHYF00001	L6LAJYF00001	
5	SCREW-FAN MOTOR MOUNT	4	CWH55406J	CWH55406J	
6	PROPELLER FAN ASS'Y	1	CWH03K1034	CWH03K1034	
7	NUT-PROPELLER FAN	1	CWH561036J	CWH561036J	
8	COMPRESSOR	1	CWB092256	CWB092256	
9	ANTI-VIBRATION BUSHING	3	CWH50077	CWH50077	
10	NUT-COMPRESSOR MOUNT	3	CWH56000J	CWH56000J	
11	CONDENSER	1	CWB32C2028	CWB32C2033	
12	TUBE ASSY(3-WAY VALVE)	1	CWT01C4200	CWT01C4165	
13	HOLDER COUPLING ASS'Y	1	CWH351071	CWH351071	
14	4-WAY VALVE	1	CWB001037J	CWB001037J	
15	2-WAY VALVE	1	CWB021251	CWB021251	
16	3-WAY VALVE	1	CWB011308	CWB011308	
17	STRAINER	1	CWB11094	CWB11094	
18	TERMINAL COVER	1	CWH171039	CWH171039	
19	NUT FOR TERMIANL COVER	1	7080300J	7080300J	
20	SOUND PROOF BOARD	1	CWH151173	CWH151173	
21	SOUND PROOF MATERIAL	1	CWG302433	CWG302433	
23	REACTOR	1	G0C193J00001	G0C193J00001	
24	CONTROL BOX COMPLETE	1	CWH14C5747	CWH14C5746	
26	TERMINAL BOARD ASS'Y	1	CWA28K1121	CWA28K1121	
27	CONTROL BOARD COMPLETE	1	CWH14C5749	CWH14C5748	
28	CONTROL BOARD CASING	1	CWH102298	CWH102298	
29	COVER-CONTROL BOX	1	CWH131300	CWH131300	
31	ELECTRONIC CONTROLLER	1	CWA73C2675	CWA73C2674	
32	TUBE ASS'Y(CAPILLARY)	1	CWT01C3773	CWT01C4021	
33	CAPILLARY	1	CWB15386	CWB15416	
34	SENSOR COMPLETE(COMP)	1	CWA50C2209J	CWA50C2209J	
35	SENSOR COMPLETE(PIPING)	1	CWA50C2282J	CWA50C2282J	
36	V-COIL COMPLETE	1	CWA43C2179J	CWA43C2179J	
37	TOP PLATE	1	CWE031054A	CWE031054A	
38	CABINET FRONT PLATE	1	CWE06C1211	CWE06C1211	
39	CABINET SIDE PLATE (R)	1	CWE041224A	CWE041224A	
40	CABINET SIDE PLATE (L)	1	CWE041247A	CWE041247A	
41	CONTROL BOARD COVER	1	CWH13C1161	CWH13C1161	
42	HANDLE	1	CWE161001	CWE161001	

Note:

All parts are supplied from PHA-AG, P.R. China.